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Russian Aviation in Support of the Maneuver Defense

Dr. Lester W. Grau and Charles K. Bartles

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RUSSIAN AVIATION

IN SUPPORT OF THE

MANEUVER DEFENSE

манёвренная оборона

Maneuver defense [манёвренная оборона] is a form of defense whose goal is to inflict enemy casualties, gain time, and preserve friendly forces with the potential loss of territory. It is conducted, as a rule, when there are insufficient forces and means available to conduct a positional defense (Ministry of Defense of the Russian Federation, 2001). This differs from the U.S. concept of the mobile defense which “is a [type of] defensive operation that concentrates on the destruction or defeat of the enemy through a decisive attack by a striking force. It focuses on destroying the attacking force by permitting the enemy to advance into a position that exposes him to counterattack and envelopment. The commander holds the majority of his available combat power in a striking force for his decisive operation, a major counterattack.

By Dr. Lester W. Grau and Mr. Charles K. Bartles

He commits the minimum possible combat power to his fixing force that conducts shaping operations to control the depth and breadth of the enemy's advance. The fixing force also retains the terrain required to conduct the striking force's decisive counterattack” (Department of the Army [DA], 2001). This differs from the Russian concept in that the Russians do not intend to permit the enemy to advance in order to counterattack. They intend to fight the enemy and reduce his forces without becoming decisively engaged. Russian maneuver battalions and brigades conduct maneuver defense, whereas the U.S. considers mobile defense as a corps-level fight (DA, 2001).^{*} In future conventional

^{*}“Units smaller than a corps do not normally conduct a mobile defense because of their inability to fight multiple engagements throughout the width, depth, and height of the AO, while simultaneously resourcing striking, fixing, and reserve forces.” This is not to say that Russian army groups would not conduct maneuver defense, nor that their concepts will differ radically from those of a U.S. Corps. Rather, the training and planning for such is at lower level in the Russian force.

maneuver war, continuous trench lines, engineered and fixed defenses extending across continents, as occurred in Europe in World Wars I and II will not occur. According to Russian military guidance, the maneuver defense, eventually leading to a positional defense will be their primary defense and will be conducted by the maneuver brigades as their base formation (Ministry of Defense of the Russian Federation, 2013).^{*}

Ever since the Gulf war, ground forces have realized that unprotected maneuver in the open may lead to decimation. Less modern ground forces have attempted to negate this by moving the fight to terrain that defeats or degrades high-precision systems—mountains, jungles, extensive forests, swamps, and cities—while conducting a long-term war of attrition to sap the political

^{*}Ministry of Defense of the Russian Federation, 2013. This is a major change since Stalin's infamous order 227 issued on 28 July 1942—“He шaгy нaзaд” [Not one step backwards]—which condemned thousands of Soviet soldiers to die needlessly in positional defense.

The linear battlefield may be replaced by the fragmented [очаговый] battlefield where brigades maneuver like naval fleets, deploying maneuver and fire subunits over large areas protected by air defense systems, electronic warfare, and particulate smoke. Strong points will be established and abandoned, artillery fires will maneuver, and difficult terrain will become the future fortresses and redoubts. The First World War on the Western Front was a positional fight where artillery, field fortifications, and interlocking machine gun fire prevented maneuver. The First World War on the Eastern Front, however, was not positional, but fluid. The antithesis to the stalemate in the West was the tank. Yet, the tank did not spell the end of the linear defense. During the Second World War, the tank enabled maneuver in some places, but in other places, difficult terrain and integrated defenses prevented maneuver, and fires prevailed. The Korean War began with a great deal of

The fragmented battlefield has become common following the Gulf War. The Soviet-Afghan War, the Angolan Civil War, the Chadian-Libyan conflict, the Battle of Mogadishu, Operation Enduring Freedom, most of Operation Iraqi Freedom, the Libyan Civil War, the Sudan conflict, and the Saudi Arabian-Yemen conflict—all have involved fragmented battlefields (Kalachev, 2016). How do peer forces fight conventional maneuver war on a fragmented battlefield? Permanent combined arms battalions appear to be an important component. For decades, the Soviets and Russians have struggled with fielding, training, supporting, and fighting a combined arms

battalion with its own tanks, motorized rifle, artillery, antitank, and support subunits capable of fighting and sustaining independently over a large area. The Russian maneuver brigades now have one or two battalion tactical groups and are working to achieve four (Grau, 2014). The Russians have a long history of conducting a fragmented defense on a fragmented battlefield. The Russian Civil War is replete with such examples (Ministry of Defense of the Russian Federation, 2002). During the Second World War, in addition to its large conventional force, the Soviets fielded the largest partisan army in history. It conducted a fragmented offense and defense against a linear German force (Grau & Gress, 2010). Afghanistan, Chechnya, and now Syria also featured fragmented offense and defense.

• **FIGURE 1** shows a Russian motor-
• ized rifle brigade in a notional po-
• sitional defense (Grau & Bartles,
• 2016). It has three motorized rifle
• battalions, a tank battalion, four
• artillery battalions, two air defense
• battalions, an engineer battalion, a
• signal battalion, a support battalion,
• an Unmanned Aerial Vehicle (UAV)
• company, and an electronic warfare
• company. It is defending in two ech-
• elons with two battalions forward
• and two back. The location of forc-
• es, systems, and distances will be

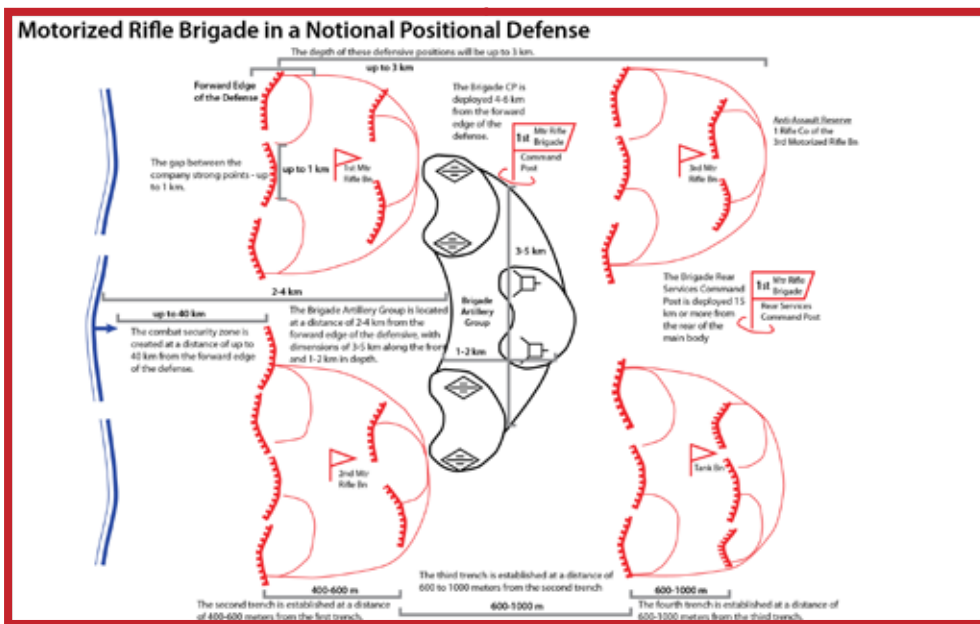


Figure 1. Motorized rifle brigade in a notional positional defense.

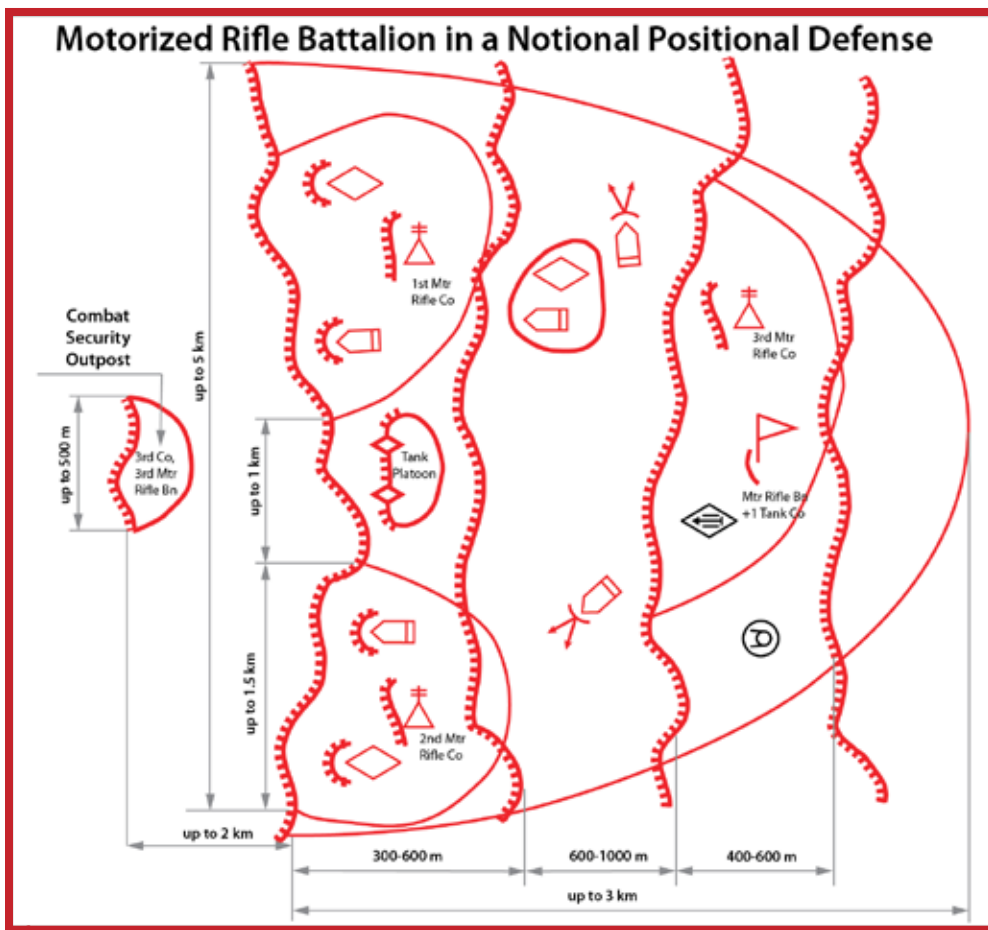


Figure 2. Motorized rifle battalion in a notional positional defense.

adjusted to fit the demands of the situation, threat, forces available, and terrain.

FIGURE 2 shows a Russian motorized rifle battalion in a notional positional defense. It has three motorized rifle companies and an organic mortar battery and AGS (Avtomaticheskyy Granatnyy Stankovyy) 17 automatic grenade launcher platoon, plus attached tanks, air defense systems, and flame-thrower weapons. The location of forces, systems, and distances will be adjusted to fit the demands of the situation, threat, forces available, and terrain (Grau & Bartles, 2016).

Soviet/Russian positional defenses are dug in and have been difficult to overcome, but expected forces ratios and the experience from recent conflicts have demonstrated that positional defense may work well in urban terrain and mountains, but is not the norm elsewhere. Armed conflicts during recent decades are characterized by the absence

of a continuous line of contact and by extensive use of raiding and commando detachments, flanking actions, and infiltration. The maneuver defense may become the "normal" defense, with the positional defense as an anomaly. In a maneuver defense, within the brigade, the battalion is assigned an area of

responsibility of 10 by 10 kilometers (frontage and depth, respectively), and a company position is up to 2 kilometers in frontage and up to 1 kilometer in depth. There is a distance of up to 1.5 kilometers in depth between positions, which ensures mutual support of defending subunits and allows maneuver to the subsequent position (Artemyev, 2017).

FIGURE 3 shows a Russian motorized rifle brigade in a maneuver defense (Artemyev, 2017). Battalion positions are shown and company fighting positions are depicted within the battalion positions, showing that the companies will fight from more than one position within each battalion position. The brigade defends against an attack from the west with its tank battalion to the north and the 3rd Motorized Rifle Battalion to the south. The 2nd Motorized Rifle Battalion is deployed further to the west in forward positions and is not initially shown on this diagram. The tank and 3rd Motorized Rifle Battalion cover three enemy high-speed avenues of approach. The northern approaches are considered the most dangerous. The enemy initially engages the 2nd Motorized Rifle Battalion, which forces the enemy to deploy and slows its advance while Russian artillery or aviation fire damages the enemy advance. The 2nd Motorized Rifle Battalion does not be-

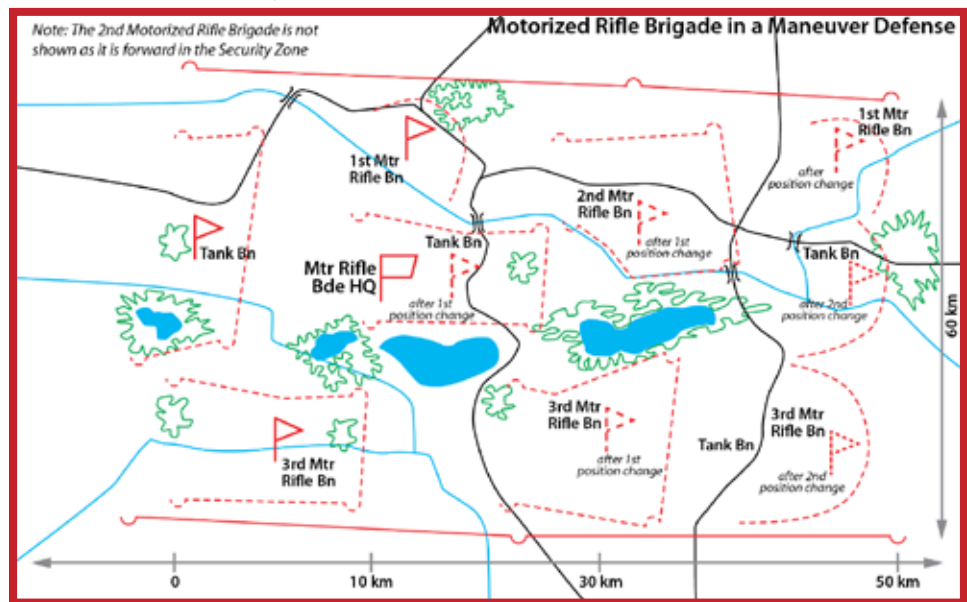


Figure 3. Motorized rifle brigade in a maneuver defense.

come decisively engaged. Rather, it withdraws to the north and through the tank battalion, moves past the 1st Motorized Rifle Battalion, and occupies a defensive position in the north.

The enemy then engages the tank battalion and the 3rd Motorized Rifle Battalion, which again forces the enemy to deploy, while Russian aviation or artillery fire once more damages the enemy advance. Neither battalion becomes decisively engaged, but withdraws. The tank battalion withdraws under the covering fire of the 1st Motorized Rifle Battalion, moves through the 2nd Motorized Rifle Battalion, and assumes a central defensive position to the east. The 3rd Motorized Rifle Battalion moves directly back and goes on line with the 2nd Motorized Rifle Battalion to its north. The enemy continues to advance and is engaged by the 1st Motorized Rifle Battalion and the tank battalion, which again forces the enemy to deploy while being engaged by Russian artillery or aviation. The 1st Motorized Rifle Battalion and tank battalion do not become decisively engaged, but move to a new position north of the tank battalion. The enemy continues to advance and is engaged by Russian artillery or aviation fires while deploying against the 2nd and 3rd Motorized Rifle Battalions. The 2nd and 3rd Motorized Rifle Battalions do not become decisively engaged. The 2nd Motorized Rifle Battalion again moves directly back and goes on line with the tank battalion to its north. The 2nd Motorized Rifle Battalion moves through the 1st Motorized Rifle Battalion and tank battalion to take up a reserve position or to deploy as a forward detachment to start the sequence again.

FIGURE 4 shows a Russian motorized rifle battalion in a maneuver defense within its initial battalion box (in this case, it is the initial position of the 3rd Motorized Rifle Battalion in the brigade defense). The battalion is facing an enemy attack from the west and has a reconnaissance patrol forward. The battalion has a

shallow security zone consisting of a motorized rifle squad in ambush to the north; a motorized rifle platoon reinforced with a tank, obstacles, and two mixed minefields in the center; and a tank in ambush protected by a mixed minefield. The battalion mortar battery is in the security zone in support of these elements. As the security zone elements withdraw and reposition, the enemy is met by three motorized rifle companies (of two platoons each) on line. The companies are reinforced by a tank platoon and protected by seven mixed minefields. Man-portable air defense systems (MANPADS) are moved up to the rear of the company positions. The mortar battery has repositioned behind the center company. There are four firing lines for the antitank reserve protecting the flanks and junctures of the companies. The third platoons of the forward companies occupy fighting positions in an intermediate line from which they can cover the withdrawal of their companies. Three self-propelled artillery batteries are located each in support of a forward company, but able to mass fires. The battalion command post is centrally located.

The companies do not become decisively engaged, but withdraw under the covering fire of their rear platoon to take up new positions. The

north and south companies move directly back to new positions in an alternate line while the combined arms reserve and antilanding reserve cover the center. The central company moves further back on line with the forward company reserves and the on-order positions of the combined arms reserve and antilanding reserve in an intermediate line. The battalion command post, mortar battery, and three artillery batteries move behind the final position shown in Figure 4. The enemy advance encounters a line of six platoons that cause the enemy to deploy and slow down while being hit with artillery or aviation strikes. This line does not become decisively engaged, but withdraws behind the two companies now on an alternate line with on-order positions for the combined arms reserve and antilanding reserve. Again, the enemy attack is slowed and punished, and then the line withdraws to its eastern position with the battalion on this alternate line. After slowing and punishing the advancing enemy, the battalion withdraws to its next battalion box, handing the battle off to a supporting battalion.

The battalion defends a 10 kilometer by 10 kilometer box. Russians consider that normally, there will be a 2-2.5 kilometer distance between intermediate and alternate lines.

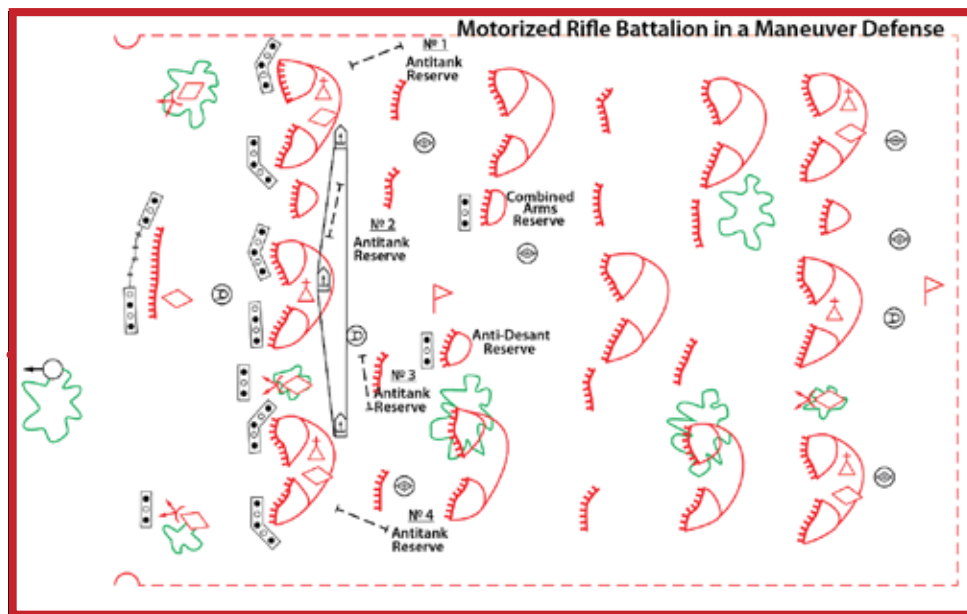


Figure 4. Motorized rifle battalion in the maneuver defense.

The rate of advance of the enemy fighting through the defensive positions is problematic; however, the Russians calculate that, should the Russian defensive positions prove stable, standard values in average conditions find that the enemy may be capable of covering the distance between defensive lines in 1-1.5 hours. Depending on the location of supporting helipads, aviation support must function quickly and effectively to mitigate this advance, particularly should the enemy attempt to flank or encircle the defenders using ground and air assault forces (Artemyev, 2017).

Thus, in a maneuver defense, defending troops displace from line to line both deliberately and when forced. The enemy organizes pursuit with the interdiction of routes of withdrawal and attacks from the flanks and rear. These actions require separate fire support in which army aviation units are assigned to support covering-force subunits and rear guards, to engage flanking detachments, and to slow the rate of pursuit. In certain sectors, maneuver will be combined with blocking and employment of flanking and raiding detachments (Artemyev, 2017).

RUSSIAN AVIATION FIRES IN SUPPORT OF MANEUVER DEFENSE

The Soviet Air Force had the largest air force in the world. Today, the Russian Air Force is much smaller than the U.S. Air Force after having undergone force reductions and much restructuring. Currently, the Russian Aerospace Forces (VKS) consists of three main branches: the space troops, who operate Russian satellites and ground-based space infrastructure; the air defense troops, who operate strategic air defense systems such as the S-300, S-400, and S-500; and the Russian Air Force, who operate all non-naval aviation and large UAVs. The Russian military has fielded a modern, extensive, integrated air defense

system at the strategic and operational-strategic levels (provided by the VKS air defense troops), and the operational and tactical levels provided by air defense assets organic to the ground troops, airborne (VDV), and naval infantry* (there are two air defense battalions in most maneuver brigades). This integrated, and overlapping air defense system, frees the Russian Air Force from many air defense-related missions, allowing it to concentrate on other missions. Since the Russian ground forces, unlike the U.S. Army, possess no manned aviation assets, most combat support of the Russian ground forces, airborne, and naval infantry is now accomplished by the Russian "army aviation." Russian army aviation belongs to the air force and consists of helicopter aviation and close air support aircraft such as the SU-25 Frogfoot (single-seat twin-engine jet). Maneuver defense is fast-moving and fluid. Since the maneuver defense is based on not becoming decisively engaged, the defender and attacker are spending 60-65% of a battle in maneuver. Consequently, artillery fire has less time to destroy an enemy effectively before the enemy has moved (Artemyev, 2017).

Artillery, antitank weapons, and aviation strikes are concentrated against the most threatening enemy axes of advance. The efforts of these systems should be distributed by time and place. Impact areas from artillery concentration produce zones of dust and smoke, which can reach 1,000 meters altitude and remain for 20 minutes. Visibility within these zones does not exceed 500-1,200 meters. Introduction of aviation strikes in an area will severely curtail artillery fires and fire density. It also raises the problem of airspace deconfliction. In a defense, the bulk of tank, antitank, and artillery fire is concentrated within 3 kilometers of the forward edge of defenses while fires

*Although the just the term "ground forces" is generally used throughout this document, the concepts are equally applicable to Russia's other mechanized infantry forces, the Russian airborne (VDV) and naval infantry.

from 3-10 kilometers away, as well as fires to the flanks of an attacking enemy, are less numerous (Artemyev, 2017).

There will be a limited number of army aviation sorties available and, in the absence of a fixed front line, they should not be expended in fragmented efforts. They must provide a decisive effect against the most dangerous threats while preserving decisive power for the final defensive effort in a positional defense. In a maneuver defense, defending forces displace from line to line on order or under pressure. The enemy will attempt to pursue these forces, interdict their routes of withdrawal, and attack from the flanks and rear. Army aviation may support covering forces and rear guards; attack enemy flanking detachments; and slow the enemy pursuit. In some sectors, maneuver withdrawal may be combined with holding actions and use of flanking and raiding detachments. Aviation support to ground forces in the maneuver defense includes:

-Air support to containing actions

[авиационной поддержке скользящих действий];

-Air support to troop maneuver

[авиационной поддержке маневра войск];

-Air support to raids

[авиационной поддержке рейдовых действий]; and

-Air support to flanking actions

[авиационной поддержке обходящих действий] (Artemyev, 2017).

The aviation requirements will be reduced during air support to containing actions as ground forces fight to hold prepared positions. The line of contact is determined on the most likely enemy avenue of approach (which is, as a rule, limited by physical features, barrier lines, or by engineer and troop terrain preparations). Army aviation units are on

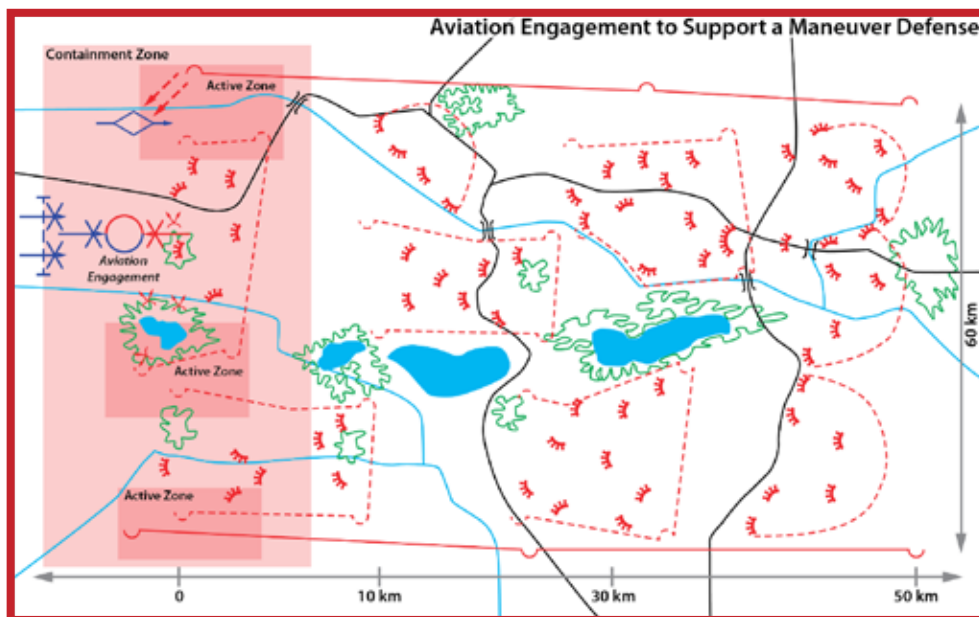


Figure 5. Aviation engagement maneuver defense.

call at ground alert positions at established helipads and prepared to carry out successive strikes against targets discovered during combat (Artemyev, 2017).

Army aviation requirements differ considerably during air support to troop maneuver. Ground forces usually maneuver from line to line along specified routes; however, the location of enemy flanking and encircling attacks can only be predicted. Consequently, the limited forces and assets can provide a unified response package only if the information component and reconnaissance fire component are working capably to provide timely ground and air ambushes (Artemyev, 2017).*

Air support to raids places strict demands on rapid action. Raiding detachments, moving in the rear of an enemy force, have a limited time to carry out their mission, move out of the way of enemy attack, and either rejoin the main body or occupy a designated defensive line. Along with the time restraints, air support must achieve surprise while not revealing the activity of the raiding detachment prematurely. Subsequently, aviation should support the

*The Russian reconnaissance fire complex links reconnaissance assets with a command and fire direction center with dedicated artillery, missiles, and aviation for destruction of priority enemy targets upon detection in near real time.

raiding detachments' withdrawal by transitioning to the air support to troop maneuver mission (Artemyev, 2017).

Air support to flanking actions is a logical continuation of air support to containing actions. The reconnaissance fire systems of army aviation will determine the nature of aviation unit actions (Artemyev, 2017).

Continuous aviation support will rely on established airborne "loiter areas" and strip-alert forces while retaining some aircraft for rapid-response reconnaissance fire missions. For support of maneuver defense, Army aviation should divide the combat employment area into active and containment zones.

The active zone is delineated by priority fire engagement of enemy ground targets, which are limited by the flanks and unit boundaries to the space between the positions of the ground forces being supported. This will permit the defending brigade to concentrate its firepower (and antitank reserve) to delay and erode the attacking enemy. In this instance, an enemy tank unit is attacking the northern flank of the Russian brigade (Figure 5) and is attacked by army aviation SU-25

combat support aircraft (Artemyev, 2017).

The army aviation containment zone will concentrate on repelling or denying the enemy air by engaging its airborne assault force and enemy fire support helicopters. It is permissible for aviation to enter this zone either by skirting the friendly tactical air defense zone during the cross-country flight of the enemy airborne assault force or flying directly through friendly air defenses upon detecting attack groups of enemy fire support helicopters (Artemyev, 2017).* In **FIGURE 5**, three enemy gunships (in dark blue), presumably leading an air assault, are flying directly toward the defending tank battalion. A Russian helicopter has overflown the battalion position (hopefully after getting the applicable air defense into "weapons tight" or "weapons hold") and is engaging the enemy gunships in aerial combat and calling for reinforcement.

RUSSIAN RECONNAISSANCE IN SUPPORT OF ARMY AVIATION

The Russians divide the information space into the far zone and near zones with separate reconnaissance/intelligence groups attending to each. One of the difficulties in detecting enemy forces in areas with ground relief are the cut-out or "shadow" zones behind hills, in valleys, or in other places where reserve forces and loitering helicopters hide. Unmanned aerial vehicles from the organic brigade UAV Company or external UAVs, reconnaissance aircraft, and satellites can provide a look into the far "shadow" zones with a priority of early detection of enemy airborne systems. The reconnaissance effort is directed to those axes presenting the greatest danger of armed enemy air penetra-

*Helicopter air-to-air combat has long been trained for and practiced by Russian army aviation. See Lester W. Grau & James H. Adams. (2003, January–February). Air Defense with an attitude: Helicopter versus helicopter combat. Military Review.

tion of the Russian information zone (Artemyev, 2017).

As shown in **FIGURE 6**, the 2nd Motorized Rifle Battalion is withdrawing through the tank battalion to its next position. The enemy is following in strength with an enemy tank battalion attacking the northern flank of the brigade's tank battalion. An enemy mechanized battalion with mobile air defense is facing the tank battalion main defenses. Two enemy battalion task forces are moving in column into the space between the tank battalion and 3rd Motorized Rifle Battalion. A tank battalion is attacking directly into the 3rd Motorized Rifle Battalion. Several Russian howitzers have been knocked out by the enemy. Army aviation responds with helicopter gunships following aviation turning points (PPM) [поворотный пункт маршрута (ППМ)] to attack the enemy on the flanks and unit boundaries or to the point of combat deployment (PBR) [пункт боевого расхождения (ПБР)].

The far zone data are usually provided as a flat map (Figure 6) and the near zone data as a 3-dimensional model (Figure 7). They unify the data provided by the brigade and reconnaissance augmented by UAV and other reconnaissance systems. The reconnaissance strike group receive the same data. In this case, the enemy has massed significant combat power against the brigade, which is in danger of having elements surrounded should the planned withdrawals not go as planned. Further, the presence of enemy air defenses will cause the army aviation to pass through these weapons kill zones. The Avenger (U.S.), Roland (French/German), Gepard (German), Strela-10/Tunguska (Soviet Union and successor states), and similar air defense systems are high priority targets for artillery and army aviation (Artemyev, 2017).

FIGURE 7 concentrates on the initial position of the 3rd Motorized Rifle Battalion and posits an attack by an

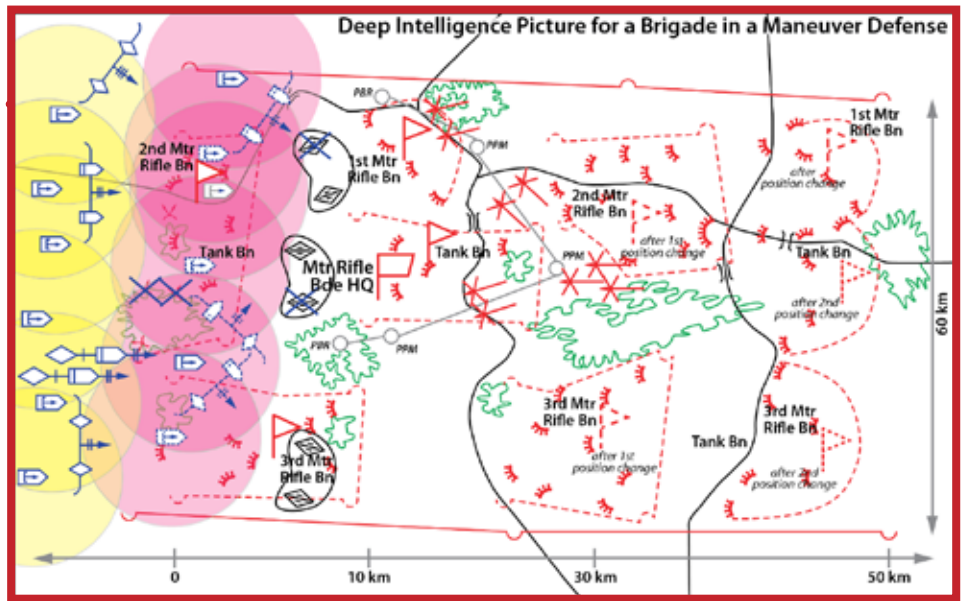


Figure 6. Deep intelligence picture for a brigade in a maneuver defense (Artemyev, 2017).

enemy company task force to the north of their position, a battalion task force to the center of their position, and a company task force to the south of their position. It shows the height and engagement areas of friendly systems. It plans an army aviation attack involving SU-25 Frogfoot close air support aircraft and helicopter gunships against the northern enemy company task force. The initial target of the SU-25 will be the enemy air defense vehicle. Artillery will concentrate on the attacking battalion task force and southern company task force. Enemy air defenses are high priority for army aviation and artillery

destruction. Identification, Friend or Foe (IFF) systems are crucial and, in some sectors, air defense will go on "weapons tight" or "weapons hold" status.

CONCLUSION

In conventional maneuver war under nuclear-threatened conditions, maneuver defense leading to a positional defense seems most likely to Russian theorists and planners. Skilled maneuver defense is designed to destroy enemy systems at long range and then withdraw without becoming decisively engaged. Aviation and artillery are key to this

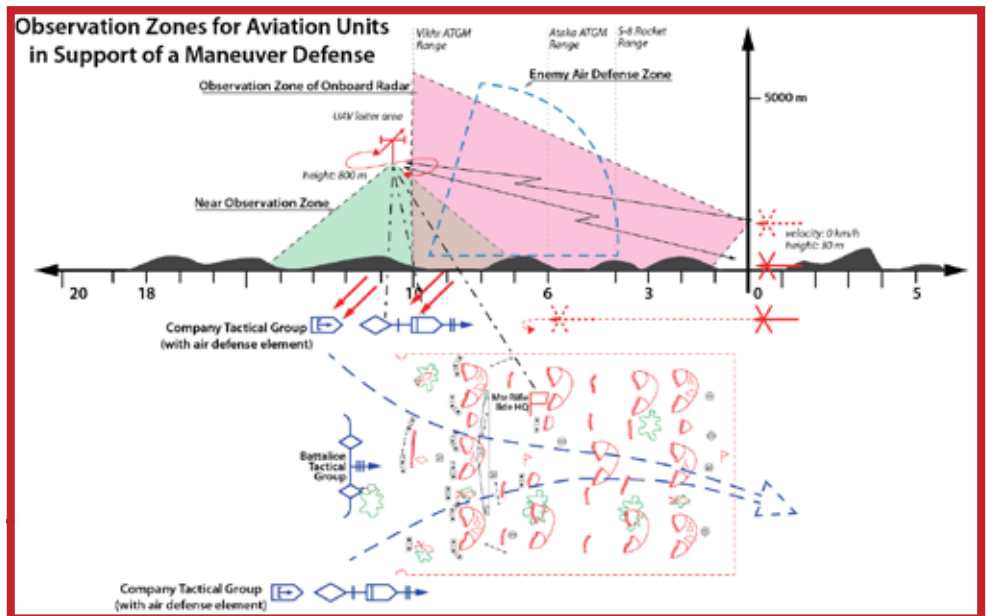


Figure 7. Observation zones for aviation units in support of the maneuver defense (Artemyev, 2017).

long-range destruction, but never work the same target simultaneously. Artillery fights the enemy in front of the ground formation, whereas aviation fights any enemy trying to flank or encircle the defenders. A key target for both is mobile enemy air defense. The Soviets, and now the Russians, have long worked on developing a system that could detect, target, and destroy high-priority targets in near real time. The Russian reconnaissance fire complex now links reconnaissance assets with a command and fire direction center with dedicated artillery, missiles, and aviation for destruction of priority enemy targets in near real time. This system is tied in with the aviation and maneuver headquarters and will be involved in the maneuver defense when appropriate.

Russian aviation does not like to fly over friendly formations during battle, as this will require shutting off indirect fire artillery and mortars and putting air defense weapons in “weapons tight” or “weapons hold” status. Russian artillery is usually positioned closer to the Forward Edge of the Battle Area (FEBA) than Western artillery and conducts much of its defensive fire from direct lay or low trajectory to avoid airspace difficulties. The problem still remains warning or shutting off mortars and air defense systems. Russian army aviation will overfly friendly formations when enemy helicopter gunships approach the formation, as these gunships may be escorting an air assault intent on cutting off defending units before they can withdraw. Russian army aviation has an aerial combat role and trains for it using air-to-air missiles and chain gun fire.

Russian army aviation has changed procedures and tactics, techniques, and procedures to deal with the fluid nature of the maneuver defense. Priority importance is given to:

-preserving the combat potential of supported troops through rational distribution of forces and assets to

fire engagement zones within the limits of the phases of fire engagement of the enemy; and

-preserving decisive might for the final stage of the mobile defense zone with simultaneous execution of missions of air support to troops on all defensive lines (Artemyev, 2017).

Army aviation units will conduct reconnaissance-strike actions to destroy highly mobile important enemy targets. Such actions will be employed on fully independent axes (zones of active operations) in spaces between zones and positions and on the flanks of attacking enemy groupings 3-10 kilometers away from defending or counterattacking units. The substantial increase in the independence of army aviation unit operations in conducting reconnaissance-strike actions drove a new approach to evaluating fire engagement targets based on determining the priority of their destruction and on selecting the status of the attack target (Artemyev, 2017).

Training for aerial combat by Russian helicopters has been engaged in for at least 15 years and uses chain guns, the SA-18 Igla (surface-to-air missile), and air-to-air rockets. There are at least 10 derivations of


the standard S-8 rocket, several of which may be employed in aerial combat against enemy helicopters, UAVs, and cruise missiles. 



Photo by Charles Rosemond

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